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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,536	06/30/2004	Stephen Brocchini	POLYT 9200 WO-US	6473
39843	7590	08/02/2006	EXAMINER	
BELL & ASSOCIATES 416 FUNSTON ST., SUITE 100 SAN FRANCISCO, CA 94118			CHEUNG, WILLIAM K	
			ART UNIT	PAPER NUMBER

1713

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/500,536

Applicant(s)

BROCCHINI ET AL.

Examiner

William K. Cheung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 38-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 38-73 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 100404.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

1. Claims 1, 38-73 are pending.

### *Claim Objections*

¶

2. Claim 73 is objected to because of the following informalities: Claim 73 is setting dependency onto a cancelled claim. Appropriate correction is required.
3. Claims 1, 38-73 are objected for using inconsistent notations for  $C_x-C_y$  and  $Cx-Cy$ , where  $x, y$  denote numbers. If  $x, y$  are started out as subscript, they should remain as subscript.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 49-73 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 49 (line 2), the recitation "interrupted" is considered indefinite. What does it mean?

Claim 51 (line 1), the recitation "-COR<sup>a</sup>" is considered indefinite. Is "CO" a carbonyl or an ether group? Further, the recitation lack antecedent basis for this limitation in the claim.

Claim 52 recites the limitation "structure (II)" and its associating structural notation. There is insufficient antecedent basis for this limitation in the claim.

Claim 59 (line 25), the recitation "where R<sup>15</sup> is -O-Y, R<sup>15</sup> is ...." is considered indefinite. What does it mean? Claim 59 also fails to include a period at the end of the claim.

Claim 69 (line 28), the recitation "where R<sup>27</sup> is -O-Y1, R<sup>27</sup> is ..." is considered indefinite. What does it mean?

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

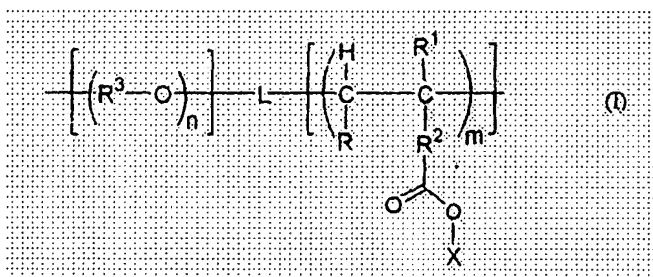
A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 38-58, 72, 73 are rejected under 35 U.S.C. 102(b) as being anticipated by Brandt et al. (US 6,235,813).

The invention of claims 1, 38-58, 72, 73 relate to a **block copolymer** comprising the unit (1)



wherein:

*R* is selected from the group consisting of hydrogen,  $C_1$ - $C_{18}$  alkyl,  $C_2$ - $C_{18}$  alkenyl,  $C_7$ - $C_{18}$  aralkyl,  $C_7$ - $C_{18}$  alkaryl,  $C_6$ - $C_{18}$  aryl, carboxylic acid,  $C_2$ - $C_{18}$  alkoxycarbonyl,  $C_2$ - $C_{18}$  alkaminocarbonyl, or any one of  $C_1$ - $C_{18}$  alkyl,  $C_2$ - $C_{18}$  alkenyl,  $C_7$ - $C_{18}$  aralkyl,  $C_7$ - $C_{18}$  alkaryl,  $C_7$ - $C_{18}$  aryl,  $C_2$ - $C_{18}$  alkoxycarbonyl and  $C_2$ - $C_{18}$  alkaminocarbonyl substituted with a heteroatom within, or attached to, the carbon backbone;

$R^1$  is selected from the group consisting of hydrogen and  $C_1$ -  $C_7$  alkyl groups;

$R^2$  is linking group;

*X* is an electron withdrawing group;

$R^3$  is selected from the group consisting of  $C_1$ -  $C_{18}$  alkylene,  $C_2$ -  $C_{18}$  alkenylene,  $C_7$ -  $C_{18}$  aralkylene,  $C_7$ -  $C_{18}$  alkylene and  $C_6$ -  $C_{18}$  arylene;

*L* is a divalent linker joining the blocks;

and *m* and *n* are each an integer of greater than 1.

Brandt et al. (abstract; col. 2, line 40 to col. 3, line 5) disclose clearly disclose the block copolymers comprising an acrylate block and an alkyleneoxide block as claimed. Brandt et al. (col. 2, line 62-64) clearly teach that  $R^2$  are "identical or different" which indicate that the acrylate block units comprises a mixture of the pendent  $R^2$  groups as disclosed in Brandt et al. (col. 2, line 62-64). Brandt et al. clearly disclose electronic withdrawing groups, dialkylamino and perfluoroalkyl radicals. The ester linkage as disclosed in Brandt et al. (col. 2, line 45-57) can be considered as a linker group L as claimed. Claims 1, 38-58, 72, 73 are anticipated.

***Claim Rejections - 35 USC § 103***

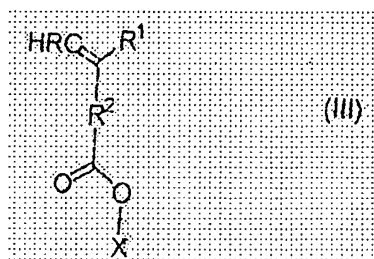
8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 59-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brandt et al. (US 6,235,813).

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The invention of claims 59-68, 70, 71 relates to a **process for the production of a block copolymer**, comprising the polymerization of **ethylenically unsaturated monomers including a compound (III)**



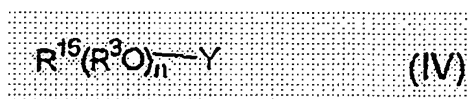
wherein R is selected from the group consisting of hydrogen, C<sub>1</sub>- C<sub>18</sub> alkyl, C<sub>2</sub>- C<sub>18</sub> alkenyl, C<sub>7</sub>-C<sub>18</sub> aralkyl, C<sub>7</sub>-C<sub>18</sub> alkaryl, C<sub>6</sub>-C<sub>18</sub> aryl, carboxylic acid, C<sub>2</sub>-C<sub>18</sub> alkoxy carbonyl, C<sub>2</sub>-C<sub>18</sub> alkaminocarbonyl, or any one of C<sub>1</sub>- C<sub>18</sub> alkyl, C<sub>2</sub>-C<sub>18</sub> alkenyl, C<sub>7</sub>-C<sub>18</sub> aralkyl, C<sub>7</sub>-C<sub>18</sub> alkaryl, C<sub>6</sub>-C<sub>18</sub> aryl, C<sub>2</sub>-C<sub>18</sub> alkoxy carbonyl, and C<sub>2</sub>-C<sub>18</sub> alkaminocarbonyl substituted with a heteroatom within, or attached to, the carbon backbone;

R<sup>1</sup> is selected from the group consisting of hydrogen and C<sub>1</sub>-C<sub>6</sub> alkyl groups;

R<sup>2</sup> is a linking group;

X is an electron withdrawing group;

in the presence of an initiator compound (IV)

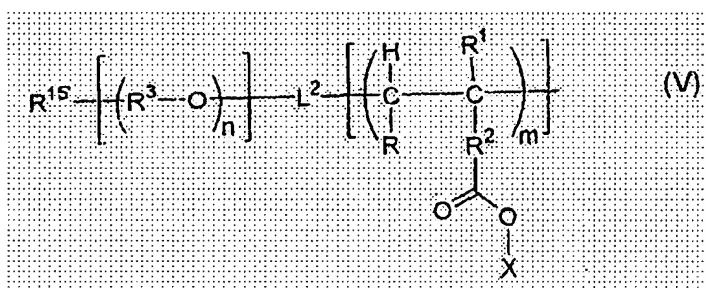


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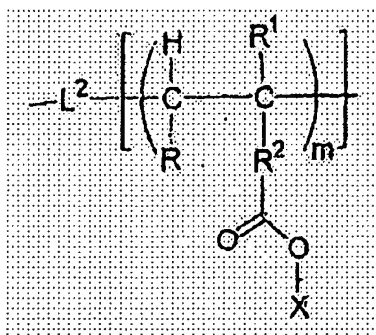
wherein  $n$  is an integer of 1 or more and  $Y$  is a radical initiating group;

$R^3$  is selected from the group consisting of  $C_1$ -  $C_{18}$  alkylene,  $C_2$ - $C_{18}$  alkenylene,  $C_7$ - $C_{18}$  aralkylene,  $C_7$ - $C_{18}$  alkarylene and  $C_6$ - $C_{18}$  arylene;

$R^{15}$  comprises a group selected from the group consisting of hydrogen,  $C_1$ -  $C_{18}$  alkyl,  $C_2$ - $C_{18}$  alkenyl,  $C_7$ - $C_{18}$  aralkyl,  $C_7$ - $C_{18}$  alkaryl and  $C_6$ - $C_{18}$  aryl,  $C_1$ -  $C_{18}$  alkoxy,  $C_2$ - $C_{18}$  alkenyloxy,  $C_7$ - $C_{18}$  aralkoxy,  $C_7$ - $C_{18}$  alkaryloxy,  $C_6$ - $C_{18}$  aryloxy and -O- to produce a block copolymer comprising the unit (V)



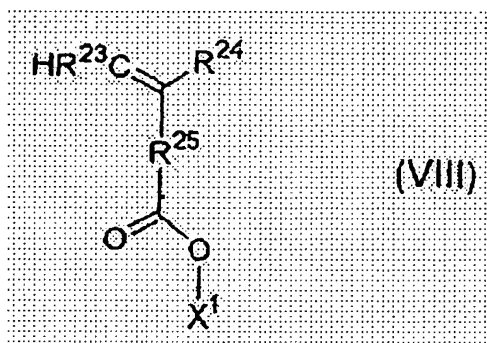
wherein  $m$  and  $n$  are as defined above and  $L^2$  is a divalent linking group derived from  $Y$  and  $R^{15}$  is  $R^{15}$  or where  $R^{15}$  is -O- $Y$ ,  $R^{15}$  is





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The invention of claims 69 relates to the **process for the production of a block copolymer**, comprising the steps of polymerizing **ethylenically unsaturated monomers comprising a compound (VIII)**.



Brandt et al. (col. 6, line 59 to col. 12, line 59) disclose a sequence of examples showing how the disclosed block copolymers can be made. Further, Brandt et al. (col. 10, line 3-12) disclose how the pendant groups can be grafted onto the block copolymers.

The difference between Brandt et al. and claims 59-71 is that Brandt et al. do not contain a working example showing the reactions for obtaining the dialkylamino pendant functional groups.

However, Brandt et al. (col. 2, line 62-64) clearly teach that  $R^2$  are "identical or different" which indicate that the acrylate block units comprises a mixture of the pendent  $R^2$  groups as disclosed in Brandt et al. (col. 2, line 62-64). Brandt et al. clearly disclose electronic withdrawing groups, dialkylamino and perfluoroalkyl radicals. Therefore,

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motivated by the expectation of success of obtaining the block copolymers of Brandt et al., it would have been obvious to one of ordinary skill in art to perform the example 9D with an appropriate reagent to achieve the pendant functionalities as disclosed in Brandt et al. (col. 2, line 62-64) to obtain the invention of claims 59-71. In view of the 112 rejection set forth, the reasons for the instant rejection is considered adequate.

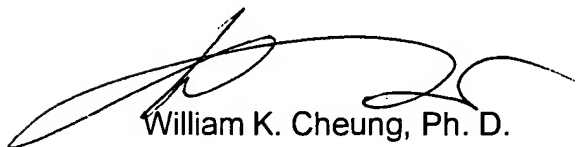
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K. Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



William K. Cheung, Ph. D.

Primary Examiner

July 31, 2006

**WILLIAM K. CHEUNG**  
**PRIMARY EXAMINER**